



U.S. Department
of Transportation
**Federal Aviation
Administration**

Aviation Maintenance Alerts

AC No. 43-16A



**ALERT NO. 257
DECEMBER 1999**

**Improve Reliability-
Interchange Service
Experience**

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**U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
WASHINGTON, DC 20590**

AVIATION MAINTENANCE ALERTS

The Aviation Maintenance Alerts provide a common communication channel through which the aviation community can economically interchange service experience and thereby cooperate in the improvement of aeronautical product durability, reliability, and safety. This publication is prepared from information submitted by those who operate and maintain civil aeronautical products. The contents include items that have been reported as significant, but which have not been evaluated fully by the time the material went to press. As additional facts such as cause and corrective action are identified, the data will be published in subsequent issues of the Alerts. This procedure gives Alerts' readers prompt notice of conditions reported via Malfunction or Defect Reports. Your comments and suggestions for improvement are always welcome. Send to: FAA; ATTN: Designee Standardization Branch (AFS-640); P.O. Box 25082; Oklahoma City, OK 73125-5029.

UNAPPROVED PARTS NOTIFICATION

UNAPPROVED PARTS NOTIFICATION No. 99-098

No. 99-098
November 1, 1999

AFFECTED AIRCRAFT: Large Transport Category

PURPOSE: The purpose of this notification is to advise all owners, operators, maintenance entities, and manufacturers of large transport category aircraft of improper repairs performed by third parties other than the manufacturer (Crane Hydro-Aire) that are found on fuel pumps used on Boeing and McDonnell Douglas aircraft, and to solicit information concerning such repairs. It is possible that these repairs may not be limited to fuel pumps used on Boeing and McDonnell Douglas aircraft or Crane Hydro-Aire fuel pumps.

BACKGROUND: During three Suspected Unapproved Parts investigations, technicians discovered repairs not approved by Hydro-Aire (i.e., soldering,

wire splicing, low-grade sleeving) and non-OEM parts were installed in several Crane Hydro-Aire fuel pumps used on both Boeing and McDonnell Douglas aircraft. The soldering method employed in these repairs is not a reliable method and could cause arcing, thermal stress, and degradation of the electrical insulating capabilities of the sleeving. Such repairs could present a safety hazard.

RECOMMENDATION: Please review all available current and historical records concerning the repair or overhaul of large transport-category aircraft fuel components (boost, override/jettison, scavenge, and other types of fuel pumps) for evidence of improper repairs or unapproved parts.

FURTHER INFORMATION: The Federal Aviation Administration (FAA) appreciates any information available regarding this matter. Attached to this notification is a checklist one may use to convey such information. Send all available information (manufacturer, part number, serial number, owner, aircraft make/model, maintenance provider, type of improper repair, name of suspected unapproved part, etc.) to: FAA, Eastern Region Headquarters, Flight Standards Division Office, ATTN: Salvatore Scalone, AEA-230B, JFK International Airport,

Fitzgerald Federal Building, Jamaica,
NY 11430, telephone (718) 553-3249,
fax (718) 995-5696.

SAFETY CHECKLIST

1. Do you maintain Crane Hydro-Aire Component Maintenance Manuals (CMM) in your technical library?
___yes ___no
2. Do you have Crane Hydro-Aire Service Information Letter (SIL) No. 60.703-2-12, issued March 1, 1999?
___yes ___no
3. Do you repair Crane Hydro-Aire fuel pumps within your facility?
___yes ___no
4. Do you use a repair station outside your facility to repair the Crane Hydro-Aire fuel pumps for your utilization or resale?
___yes ___no
5. Have you evaluated your fleet of aircraft to determine if you utilize Crane Hydro-Aire fuel pumps in your fleet?
___yes ___no
6. Have you resold Crane Hydro-Aire fuel pumps to operators or parts distributors?
___yes ___no
7. Have you experienced failures of the Crane Hydro-Aire fuel pumps in your operation?
___yes ___no
8. Do you use another manufacturer's fuel pump in your fleet?
___yes ___no
9. Have you or your repair station vendor identified any improper repairs or unapproved parts in Crane Hydro-Aire fuel pumps?
___yes ___no

FAA SAFETY RECOMMENDATION 99.360

OXYGEN SYSTEM REGULATORS

An incident, reported on page 7 of the July 1998 edition of this publication, involved a fire which was related to servicing the oxygen system following a hydrostatic test. After an investigation, the FAA issued Safety Recommendation 99.360.

During the investigation, the technician determined the fire originated in the oxygen regulator (B/E Aerospace P/N 172270-01). Investigators found that the fire was caused by an improperly-installed oxygen regulator knob. The regulator manufacturer conducted an investigation and confirmed three similar occurrences of this defect.

B/E Aerospace cooperated with the FAA and issued Alert Service Bulletin (ASB) 172011-35A-1 regarding oxygen regulators. B/E Aerospace sent copies of the ASB to all known customers who purchased these regulators.

The following is an unedited copy of the ASB that B/E Aerospace issued.

B/E AEROSPACE ALERT SERVICE BULLETIN

**1999/09/20
172011-35A-1**

I. Planning Information

A. Effectivity 172XXX-XX Regulators

Excludes: 172032-XX, 172034-XX, 172035-XX, 172040-XX and 172042-XX portable regulators.

B. Reason

To alert owners not to remove the regulator knob during use. It is possible for the regulator knob to be reinstalled incorrectly after removal by non qualified personnel. The cap should only be removed during regulator servicing by authorized personnel. Improper assembly procedure can lead to regulator and/or oxygen system failure. To this date, back to the introduction of this product 15 years ago, there have been three confirmed cases where regulator knobs were removed and reassembled incorrectly, all resulting in flash fires.

Note: Although 172032-XX, 172034-XX, 172035-XX, 172040-XX and 172042-XX Portable Regulators are excluded, the knob should also not be removed. The pressure regulation setting can be affected if the knob is not reassembled correctly.

C. Description (Refer to Figure 1)

Items (1), (2), and (3) are not to be tampered with or removed. If the knob (1) is removed and reassembled allowing two complete turns of the regulator shaft (4), bottle high pressure will be allowed to enter the low pressure side/system. Knob (1) is always assembled with the regulator shaft (4) backed completely out and the knob (1) is kept from rotation when tightening the knob retaining screw (3). Note: With the knob (1) correctly installed, rotation will never exceed 1.13 turns by design. It is recommended that the knob (1) remain on the regulator at all times except for regulator overhaul or knob replacement. Knob (1) is to remain on the regulator during shipping and after any regulator removal from the cylinder; for example, hydrostatic testing of the cylinder.

D. Approval

This service bulletin contains no modification information; therefore, it does not require governmental or other regulatory agency approval.

E. Manpower (not applicable)**F. Material - Cost and Availability** (not applicable)**G. Tooling - Price and Availability** (not applicable)**H. Weight and Balance** (not applicable)**I. Electrical Load Data** (not applicable)

J. Other Publications Affected - This Service Bulletin has no effect on the Component Maintenance Manual or any drawings.

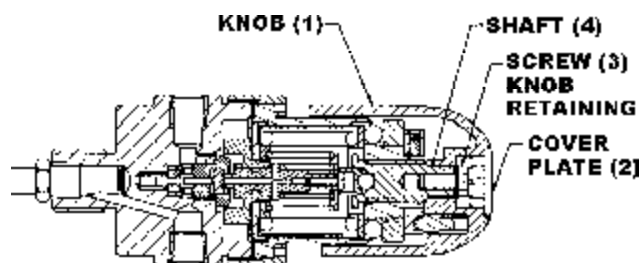
II. Accomplishment Instructions (not applicable)

Figure 1

AIRPLANES

BEECH

Beech; Model C-12C (B200); King Air; Engine Starting Problem; ATA 7240

The flightcrew reported starting difficulties with the left engine.

While troubleshooting this problem, a maintenance technician noticed an anomaly in the paint coating adjacent to a weld on the fuel flow divider case (P/N 3028332) boss. Upon applying slight side pressure to the boss a crack opened. The technician determined

the crack caused the starting problem and he replaced the fuel flow divider. The submitter did not offer a cause for this defect.

Part total time-3,872 hours, and the time since overhaul was 382 hours.

Beech; Model V35B; Bonanza; Severe Corrosion; ATA 5730

This aircraft is equipped with an alcohol wing anti-icing system installed in accordance with Supplemental Type Certificate (STC) SA2239CE.

During an annual inspection, the technician discovered corrosion on the lower exterior surface of the right wing skin. This area is located beneath the alcohol anti-ice tank. The technician removed the wing skin revealing excessive corrosion on all the surrounding structural members. The technician determined the cause of this damage was moisture trapped in the alcohol tank "StyroFoam" liner. He speculated the moisture collected from condensation and a lack of ventilation inside the wing compartment. The corrosion severity required replacement of the wing skin. The submitter installed an aluminum tank liner and provided a means for air circulation.

Part total time not reported

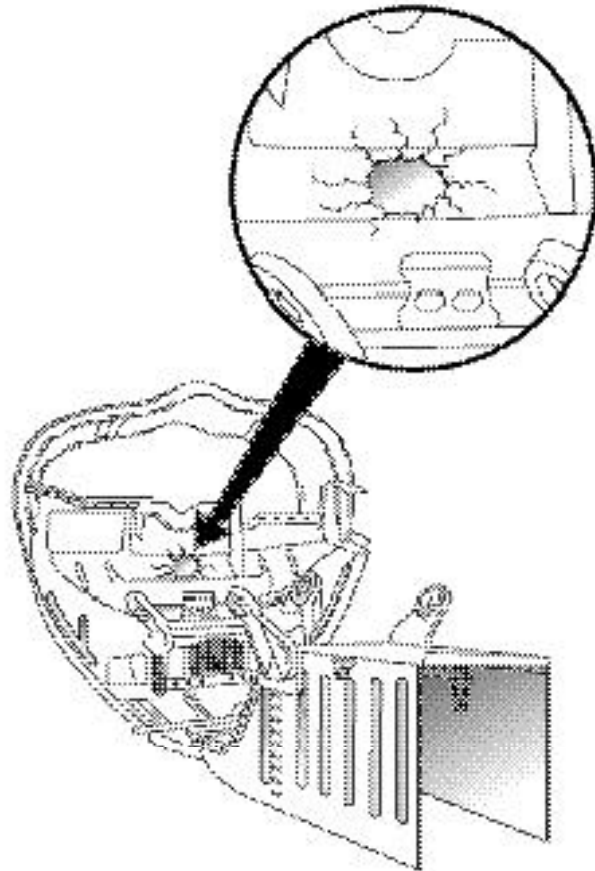
Beech; Model A36; Bonanza; Cowling Damage; ATA 7110

During an annual inspection, the technician discovered the nose cowling cracked and broken.

The technician found the nose cowling pan (P/N 002-410014-3) severely cracked and a section measuring approximately 2 inches by 4 inches missing. The damage was located below the engine crankshaft flange opening and above the air filter. (Refer to the following illustration.) The cracks radiated from the missing cowling section in various directions and lengths. The aft oil cooler baffle was also cracked.

The submitter attributed this damage to operational vibrations.

Part total time-425 hours.



Beech; Model A36; Bonanza; Control Column Defect; ATA 2701

During a scheduled inspection, the maintenance technician discovered defective parts on the flight control column.

The control wheel adapter shaft was broken from the adapter plate (P/N 96-524029-15). These two parts separated at a weld joint. Technicians complied with Airworthiness Directive (AD) 71-24-10 and Beech Service Instruction (SI) 0254-156, Revision IV, on this aircraft. However, they did not accomplish the additional weld required by AD 71-24-10,

(shown in SI 0254-156, figure 4). We recommend a thorough inspection of this area during scheduled inspections. Refer to AD 71-24-10 and Beech SI 0254-156 for specific information and applicability to other aircraft.

Part total time not reported.

Beech; Model A36; Bonanza; Aileron Tube Chafing; ATA 2710

During an annual inspection, the technician discovered severe chafing damage on the right aileron push-pull tube.

The aileron push-pull tube (P/N 35-521152-4) had worn almost completely through the wall thickness due to chafing and vibration at the point where it contacted the aft wing spar. This tube connects the aileron to the bellcrank and failure could have catastrophic results. The submitter stated this was the second similar defect he has found on like aircraft.

Part total time-386 hours.

Beech; Model C-45H; Engine Failure; ATA 7200

This aircraft had the "Volpar" conversion installed using two Garrett, Model TPE-331-1 engines.

The pilot reported that while turning from the base leg to final approach, the right engine "flamed out." The pilot made a successful single-engine landing and reported the discrepancy to maintenance personnel. This flight was conducted during cold winter conditions.

An investigation revealed a loose engine inlet de-ice valve cannon plug which disabled the system. This allowed ice accumulation which eventually broke off and was ingested into the engine. A visual inspection of the first stage impeller revealed no apparent damage and an operational test confirmed the engine had suffered no damage.

Part total time not reported.

Beech; Model 58; Baron; Nose Landing Gear Defect; ATA 3210

The flightcrew reported a nose landing gear defect which maintenance personnel investigated.

Maintenance personnel found the right arm of the nose gear drag aft brace broken just forward of the retraction rod attachment. The drag brace was the "old style" steel tube (P/N 45-825072-1), and severe internal corrosion caused the failure. The external surface of the tube gave no clue to the severity of the internal corrosion. The drag brace tube failed at the leading edge of the cluster weld and it appeared to be the culmination of a crack which originated at the location adjacent to the weldment.

The submitter suggested replacing the "old style" steel drag brace tubes with the "new style" aluminum tube. The submitter did not give the part number for the "new" aluminum tubes.

Part total time-5,024 hours.

Beech; Model 99A; Airliner; Landing Gear Failure; ATA 3230

After takeoff, the landing gear circuit breaker tripped when the pilot selected the landing gear control to the "up" position. The pilot used the emergency extension system to assure the gear was fully down and he made a safe landing.

Technicians previously modified this aircraft by installing Supplemental Type Certificate (STC) SA4013WE, which converted the landing gear system from a mechanical to a hydraulic system. A maintenance investigation revealed an improperly operating electric motor (Pesco P/N 115-380002), located in the left wing root area. The technician disassembled the motor disclosing a "locked up" bearing (P/N 77R14) at the drive end of the armature. After replacing the bearing and reassembly, the landing gear motor functioned properly. The submitter did not give a cause for the bearing failure.

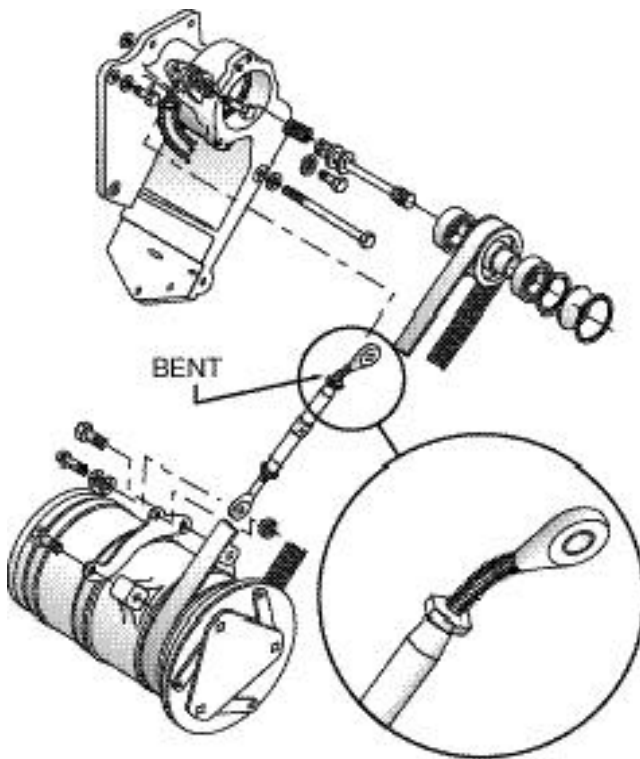
Part total time-535 hours.

Beech; Model B200; King Air; Air-conditioning System Defect; ATA 2150

During a post-flight inspection, the maintenance technician discovered a bent rod-end used on the air-conditioning system.

The rod-end (P/N 115-555026-15) connects the compressor drive pulley assembly to the compressor, and is used to adjust the compressor belt tension. The rod-end was bent approximately 10 degrees allowing the drive belt tension to decrease. (Refer to the following illustration.) The submitter stated he has found this defect on other like aircraft, and speculated the rod-end may not be strong enough for this application.

Part total time-654 hours.

**Beech; Model 200; King Air; Defective Cabin Door Hardware; ATA 5210**

During a scheduled inspection, the maintenance technician found a cabin entrance door roller missing.

The missing top forward side bolt guide roller (P/N 50-430037-7) allowed the bolt to migrate into the cabin door side frame. The bolt wore a slot approximately .25 inch by .25 inch into the door frame. Further inspection of the remaining side blocks revealed the roller pin for the top aft block was migrating out of the roller. In this case, the damage was easily repaired; however, the damage left undetected and not repaired would have been more extensive and costly to repair. The submitter speculated a lack of lubrication may have caused this damage.

Part total time-5,714 hours.

CESSNA**Cessna; Model 172P; Vacuum Hose Failure; ATA 3710**

The pilot experienced complete vacuum system failure of both the normal and standby systems.

Maintenance personnel discovered deterioration of vacuum hoses caused the failure. An inspection revealed the hoses to the altimeter and directional gyro were brittle. Bending the hoses resulted in the hose completely breaking-up and flaking. Inspection of three other like aircraft in this operator's fleet revealed the same problems. The submitter did not give the age of the hoses; however, the number of operation hours given below indicates the hoses may be well past their life expectancy.

We received two additional reports dealing with the same type occurrence. One submitter indicated that the inside red liner of the hose was crumbling from age and particles were found in the instrument screens. This report indicates that three of 12 aircraft (Cessna 172P and Cessna 182R) inspected had the same problems. The third report indicates the hose failure occurred on both the inside and outside of the hose. Hose total times listed in these two reports range from 2,540 hours to 2,680 hours.

Part total time-2,630 hours.

Cessna; Model 172R; Fuel System Leak; ATA 2820

During an avionics equipment installation, the technician noticed fuel stains around a "B" nut.

The "B" nut (P/N AN924-6D) connects the fuel line from the left tank to the fuel selector valve. Apparently, the technician applied insufficient torque to the nut when installing the line. After applying correct torque, the leak stopped.

Part total time-20 hours.

Cessna; Model 172R; Main Landing Gear Bushing Deformed; ATA 3230

During a routine inspection, the technician discovered the right main landing gear bushing (P/N 0541202-4) severely deformed.

The bushing material was pressed almost completely out of the bushing case, and protruded around the landing gear leg. The submitter speculated that the bushing material may be too soft for this application and suggested the manufacturer's engineering department conduct an evaluation.

Part total time-665 hours.

Cessna; Model 172RG; Forward Fuselage Bulkhead Cracked; ATA 5312

The pilot reported rudder and rudder trim stiffness during flight.

An investigation revealed cracked lower forward fuselage section bulkheads (P/N's 2413001-3, -4, -5, and -8). The cracks were below the center torque tube bearing aft attach points. The submitter reported finding this condition on six other aircraft. Also, the submitter indicated that Cessna does provide a service kit (P/N 172-150) to correct the problem; however, the technician did not install a service kit.

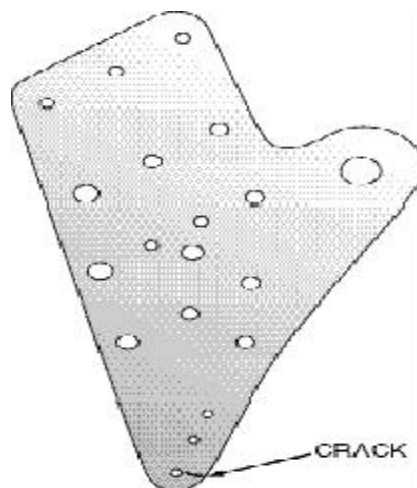
Part total time-3,121 hours.

Cessna; Model 182G; Wing Lift Strut Fitting Failure; ATA 5720

During an annual inspection, the technician discovered a cracked lower lift strut fitting (P/N 0713610-9).

This finding prompted the inspection of other like aircraft, where technicians found three additional cracked fittings. The cracks were all in the same location, with the crack radiating out of the lowest rivet hole. (Refer to the following illustration.) The cracks are located under the floor boards near the seam of the belly skin and are hard to see. Replacing the fitting requires extensive sheet metal work.

Part total time not reported.

**Cessna; Model 172-S; Oil Pressure Gauge Fluctuations; ATA 7931**

The pilot reported that during a cross country flight, the oil pressure gauge began fluctuating. The oil temperature was normal, and the low oil pressure light did not illuminate. When the oil pressure gauge began fluctuating off scale low, the pilot made a precautionary landing.

An investigation revealed the connection at the gauge was not complete. The technician attached the connector to the back of the

gauge; however, the locking tab was not engaged. This allowed the connector to vibrate, giving fluctuating readings at the gauge.

Part total time-294 hours

Cessna; Model U206G; Steering Rod-End Failure; ATA 2720

A nose gear steering rod-end (P/N S1220-3A) failed at the point where it exits the spacer assembly (P/N 1260632-3), which is the rudder trim sprocket at the end of the steering bungee. Failure causes a loss of nose wheel steering, but still allows for rudder operation. The submitter reports this is the third such occurrence he has discovered in a 10-year period.

Part total time-9,739 hours.

Cessna; Model 210D; Mixture Control Failure; ATA 7602

The engine mixture cable (P/N S1220-3A) failed in flight, causing a forced landing and destruction of the aircraft. According to the submitter, it appears the cable was rigged improperly on installation. The mixture cable had been replaced less than 1 year prior to the accident, and had only 99 flight hours since installation. Airworthiness Directive (AD) 85-03-01 and Service Letter (SL) SE 69-16 pertain to this subject, but are only one time compliance items. The submitter is submitting a safety recommendation to revise AD 85-03-01 to require repetitive inspections.

Part total time-99 hours.

Cessna; Model 414A; Oil Filter Leak; ATA 7920

The aircraft engine lost a large quantity of oil due to a hole in the remote oil filter. The aircraft had been modified with a RAM STC. The remote oil filter came in contact with the wing ice light power wire. This caused arcing, which produced a hole in the filter, allowing oil to be pumped overboard.

Part total time not reported.

Cessna; Model 550; Power Brake Valve Malfunction; ATA 3241

During replacement of the power brake valve, the anti-skid servo valve wires (positive and negative) were crossed. This prevented the anti-skid system from actuating the valve to unload the brake hydraulic pressure when a skid occurred on landing, resulting in a flat tire. The anti-skid system does not monitor this valve condition; therefore, it did not provide a warning annunciation to the crew that the system was inoperative. The wire connectors are identical and the wire numbers are similar in appearance (G111A22 and G71A22) contributing to the problem of correctly matching them. A functional test of the system would reveal the problem.

Part total time-142 hours.

GREAT LAKES

Great Lakes; Model 2T-1A-2; Horizontal Stabilizer Spar Cracks; ATA 5511

On several occasions, the submitter found cracks on horizontal stabilizers.

One can most easily find the cracks after removing the stabilizer and fin brace wires. Horizontal stabilizer spar cracks usually appear at the interconnect fittings. There is no requirement to disassemble the horizontal stabilizer while conducting a spar inspection; therefore, with the brace wires properly rigged, cracks may exist and go undetected.

The submitter speculated the spar cracks are caused by "excessive loads placed on the empennage assembly." Inspect the flying wires, brace wires, and horizontal stabilizer spar during annual inspections.

Aircraft total time-3,127 hours.

PIPER**Piper; Model PA 18-150; Super Cub; Wing Strut Corrosion; ATA 5740**

During an annual inspection, the technician discovered severe corrosion on a wing lift strut fitting.

Corrosion from the left wing upper lift strut attachment fitting (P/N 14182-00) had migrated to the front wing spar. The corrosion was located under the wing leading edge covering. This area is not accessible for inspection without cutting an inspection hole. The submitter believes this area was neglected because of the lack of accessibility for inspection. In this case, the structural integrity of the lift strut fitting, as well as the wing spar was compromised. The FAA issued Airworthiness Directive (AD) 99-01-05 which deals with this subject. Additionally, AD 99-01-05 references Piper Service Bulletins (SB) 910A and 528D. The purpose of these documents is to prevent wing strut failure leading to wing failure and we recommend all operators comply with the requirements as soon as possible.

Aircraft total time 12,934 hours.

Piper; Model PA 24-260; Comanche; Main Landing Gear Damage; ATA 3230

During a conformity inspection for importing the aircraft, the technician noticed excessive movement in the right main landing gear.

He removed the side brace stud assembly. After disassembly, the technician found that the side brace stud had been forced into the side brace fitting (P/N 225091). The side brace assembly was gouged and worn severely. Any abnormal main gear movement may indicate the presence of this defect. The submitter did not offer a cause for this defect.

Part total time-2,700 hours.

Piper; Model PA28-161; Warrior; Defective Starter Security; ATA 8011

During an annual inspection, the technician found the alternator support strut broken.

The support strut was broken at the attachment flange on the starter nose case housing (P/N PS1432-C). The attachment bolt was tight; however, evidence indicated the support strut was not aligned correctly on the flange when it was installed. If the washer had been placed under the support strut at the flange, it would correct the alignment.

Part total time not reported.

Piper; Model PA 30; Twin Comanche; Frayed Landing Gear Cable; ATA 3230

During a scheduled inspection, the technician found the left main landing gear cable severely frayed.

During a landing gear retraction test, the frayed cable caused the gear to stop just before attaining the full "down and locked" position. It is the submitter's opinion that this condition would cause the circuit breaker to open and may have given a false "down and locked" indication to the pilot. The submitter submitted another report concerning a similar occurrence on a like aircraft. The frayed cable is routed through a conduit (P/N 455-180) and the submitter suggested this area be given very close attention during inspections and maintenance.

Part total time-4,102 hours.

Piper; Model PA 31-310; Navajo; Defective Main Landing Gear Axle; ATA 3213

While walking on the airport parking ramp, a maintenance technician noticed the left main landing gear wheel tilted in at an abnormal angle.

A closer inspection revealed the brake disk contacted the gear fork. After removing the wheel assembly, the technician discovered the

axle was cracked around approximately one-half of the lower circumference. It appeared that the crack started at the bottom of the axle in the boss and bearing seam area, and spread upward in both directions. The submitter speculated the defect was caused by stress corrosion associated with age.

Part total time-13,825 hours.

Piper; Model PA 31-350; Chieftain; Landing Gear Door Failure; ATA 5280

The pilot reported that after takeoff, the landing gear failed to fully retract. After cycling the gear without success, the pilot placed it in the "down" position and executed a safe landing.

Maintenance technicians discovered a severely damaged right main landing gear inboard door (P/N 47529-31) which was held only by the aft hinge and the hydraulic actuator. Approximately 20 percent of the spot-welds on the door assembly were broken allowing the door skin to "peel" back. The hydraulic actuator, door hinge brackets, and the wheel well structure were also damaged.

The available evidence indicated the forward door hinge (P/N 46653-00) had a pre-existing crack which progressed through the entire hinge. Airworthiness Directive (AD) 80-26-05 and Piper Service Bulletin (SB) 682 apply to this subject and were complied with 61 operating hours prior to this occurrence. The submitter suggested all hinges (P/N 46653-00) be replaced with the new hinges (P/N 47529-32) regardless of their condition.

Part total time-5,798 hours.

Piper; Model PA 31-350; Chieftain; In-Flight Engine Oil Leak; ATA 7414

The pilot reported that the left engine oil pressure began to fluctuate and there was evidence of oil leakage. The left engine was feathered and the pilot accomplished a safe landing.

A maintenance technician investigating this incident discovered the magneto (Bendix P/N 10-682910-13) base broken in the magneto lower hold down area. The broken and missing section of the magneto base was in a "1/4-moon" shape. The submitter suspects someone applied excessive torque to the hold-down stud or the hold-down was not properly seated.

Part total time-390 hours.

Piper; Model PA 34-200; Seneca; Battery Fire; ATA 2432

While the aircraft was parked, a technician noticed smoke and went to investigate.

The technician determined the aircraft battery was the smoke source, and he cut a cable which stopped the smoke. The battery box lid was badly burned and the battery case was melted around the terminals. It seemed apparent that the battery suffered an internal short circuit which caused this damage. The submitter could not give a cause for the internal battery short.

Part total time not reported.

Piper; Model PA 34-200; Seneca; Throttle Control Failure; ATA 7603

The pilot reported that when he retarded the throttles for a descent, the left engine did not respond to the throttle control movement. The pilot feathered the left engine made a safe landing.

During an investigation, the maintenance technician discovered the throttle ball-and-socket style rod-end (P/N 31747-00) for the left engine separated. The submitter did not contribute a cause for this failure.

The submitter replaced all the engine control rod-ends with a spherical ball type rod-end. The authority for changing these rod-ends was not given.

Part total time approximately 5,400 hours.

Piper; Model PA 44-180; Seminole; Aileron Travel Interference; ATA 2710

During a pre-flight inspection, the pilot discovered interference with the aileron travel.

Maintenance personnel investigated and found the interference resulted from rivets installed in the left aileron striking the upper wing skin. The technician previously complied with Airworthiness Directive (AD) 81-10-04 and Piper Service Bulletin (SB) 702 on this aircraft. Service Bulletin 702, as referenced by AD 81-10-04, requires the installation of Piper Rework Kit (P/N 764 088V). Evidently, the Rework Kit was not installed properly, allowing the installed rivets to cause interference. Close observance during an operational test after completion of the work would surely have made this situation evident!

Part total time not reported.

SUKHOI**Sukhoi; Model SU-29; Aileron Defects; ATA 5751**

This article resulted from an aircraft accident investigation conducted by the National Transportation Safety Board (NTSB), the FAA, and a contingent of engineers from the Russian manufacturer.

The manufacturer recommended the following immediate actions for operators of like aircraft and a Service Bulletin is anticipated.

Ground all SU-29 aircraft with flight time exceeding 200 hours and all SU-29 aircraft manufactured between 1992 and 1995 for immediate inspection and correction including:

1. Inspection for cracks at the trailing edge of the aileron in the wood spar. If cracks are found, remove and replace the aileron before further flight.

2. Inspect for evidence of any movement at the attachment point of the aerodynamic compensators (shovel) to the ailerons. If movement is detected, remove and replace the aileron before further flight.

3. Inspect the bottom of the inboard aileron surface for cracks at the bellcrank to lever attachment point. If cracks are found, remove and replace the aileron before further flight.

4. Check the aileron deflection for a maximum travel of 28 plus or minus 1 degree up and down. If the travel exceeds these limits, check and adjust the aileron stops before further flight.

5. The aerodynamic compensator doubler modification should be incorporated as soon as possible.

Accident aircraft total time-320 hours.

HELICOPTERS**AGUSTA****Agusta; Model A109K2; Tail Rotor Trunnion Damage; ATA 6500**

During a preflight inspection, the pilot noticed that the "flapping" of the tail rotor blades was tighter than normal and felt rough.

A maintenance technician inspected the assembly and confirmed that the tail rotor was defective. When the tail rotor assembly (P/N 109-8131-02-125) was removed, two score marks were found on the trunnion (P/N 109-0131-05-115). One of the scored areas was approximately .75-inch long and .25-inch wide. The second area was .6-inch long and .5-inch wide. The tail rotor hub bushing had a "mirror" image of the scored marks on the trunnion. (Refer to the following illustration.)



Technicians removed the tail rotor assembly 40 hours prior to this discovery, and all of the components were serviceable at that time. Authorities could not determine the cause of this damage.

Time since overhaul-1,650 hours.

EUROCOPTER

Eurocopter; Model AS-350B2; Erroneous Oil Temperature Indication; ATA 7930

During a passenger carrying flight, the pilot noticed the engine oil temperature “jump” from 90 degrees Celsius (C) to 130 degrees C, which is the upper limit of the indicator. He made a precautionary landing and summoned maintenance personnel by radio.

A maintenance technician arrived in approximately 30 minutes and found the engine oil temperature indicated normal at 45 degrees C. While investigating, the technician discovered the “spade” electrical terminal (P/N 140961-1) loose at the oil temperature probe and not making a secure connection. After replacing the “spade” terminal, an inspection of the old terminal revealed a loose crimp and several strands of broken wire.

Part total time not reported.

BELL

Bell; Model 206BIII; Jet Ranger; Main Rotor Drive Shaft Coupling Damage; ATA 6310

During a scheduled inspection, the technician discovered that the main rotor drive shaft (P/N 206-040-015-103) forward coupling was leaking grease. He removed the coupling (P/N 206-040-117-003) and disassembled it for inspection. The technician found the spring, inside the coupling, broken into several pieces. The loose spring pieces inside the coupling caused gouges on the cap and the gear. The technician replaced the spring, cap, and gear.

The submitter did not offer a cause for this defect.

Part total time not reported.

AMATEUR, EXPERIMENTAL, AND SPORT AIRCRAFT

COZY

Cozy; Model MK-IV; Nose Gear Failure; ATA 3230

After landing, the nose landing gear collapsed while taxiing to the parking ramp.

An investigation revealed damage and excessive wear to the nose gear crank and worm gear assembly. The submitter speculated that the nose gear was not fully into the “locked” position prior to landing. He recommended that all operators ensure that the nose gear is fully extended and locked prior to landing. He gave no other cause for this defect.

Aircraft total time-297 hours.

ROBINSON

Robinson; Model KR-2; ELT Failure; ATA 2562

A fatal aircraft accident occurred in a remote area, and search efforts were hampered when the emergency locator transmitter (ELT) failed.

When investigators recovered the ELT (Emergency Beacon Corporation, Model EBC-102A), they found the actuating switch arm locked in the "off" position. A "shipping screw," installed by the manufacturer when the ELT was new, had not been removed when the unit was installed.

Evidently, this defect was not discovered during the last annual inspection. The submitter suggested that the FAA issue an Airworthiness Directive requiring removal of locking devices (pins, screws, etc.) used by all manufacturers prior to installation. They also suggested inspecting all ELT's now in service for the presence of locking devices which disable the unit and may have been overlooked during installation.

Aircraft total time-141 hours.

VELOCITY

Velocity; Nose Gear Failure; ATA 3230

During landing, the nose landing gear wheel assembly separated from the aircraft.

Technicians from a repair shop removed and replaced the nose wheel two flights prior to this occurrence. When the nose wheel assembly separated, it found its way into a nearby lake and was not recovered. When the aircraft came to a stop, the nose landing gear assembly was in many pieces. From the remaining nose gear, inspectors could not determine if the axle came loose or if the fork broke first. The submitter stated other like aircraft have exhibited similar nose gear defects.

Part total time-90 hours.

POWERPLANTS AND PROPELLERS

TURBINE-ENGINE FUEL CONTAMINATION

There have been several recent turbine-engine powered aircraft accidents attributed to the ingestion of contaminated fuel. The FAA and the National Transportation Safety Board (NTSB) investigated these accidents and the NTSB issued Safety Recommendation A-98-86. These failures usually resulted in partial or total engine power loss. When excessive amounts of water and/or particulate matter are mixed with aviation jet fuel, fuel metering units can malfunction and engine combustion fuel nozzles can become severely clogged.

Although many of the reported accidents involved rotorcraft, turbine-powered, fixed-wing aircraft are also vulnerable.

Every aircraft engine and airframe fuel system have been certified to operate properly with a specified amount of water and solid foreign matter present in the fuel. Fuel samples from the accident aircraft were well above the allowable contaminant levels permitted for commercial refueling sources. The fuel contamination problems seem to relate to remote refueling sources and sites which are often not maintained or monitored. These remote refueling sites often are the source of water and particulate contamination. Many aircraft manufacturers offer secondary fuel filters as an optional kit which can provide additional protection from the effects of contamination likely to be introduced by "home-made" refueling methods. Even a single refueling from a contaminated source can cause severe aircraft fuel system contamination, and even more insidiously, may not manifest itself for several hours or days.

There are many types of off-airport or remote aircraft refueling operations conducted daily, such as: aerial application, aerial survey, and

national park site-seeing where operators find it necessary to create and maintain private fuel storage and refueling facilities. Those operators are strongly cautioned to utilize all possible means to preclude the introduction of contaminated fuel into their aircraft. Fuel samples taken during preflight inspections from aircraft fuel sumps should be scrutinized for fuel contamination prior to every flight. Additionally, we highly recommend the installation of optional original equipment manufacturer (OEM)-approved aircraft fuel filters for mobile and remote refueling facilities.

Failure to observe proper fuel handling procedures can be both costly and deadly!

ACCESSORIES

METAL CHAINS USED TO SECURE FUEL CAPS

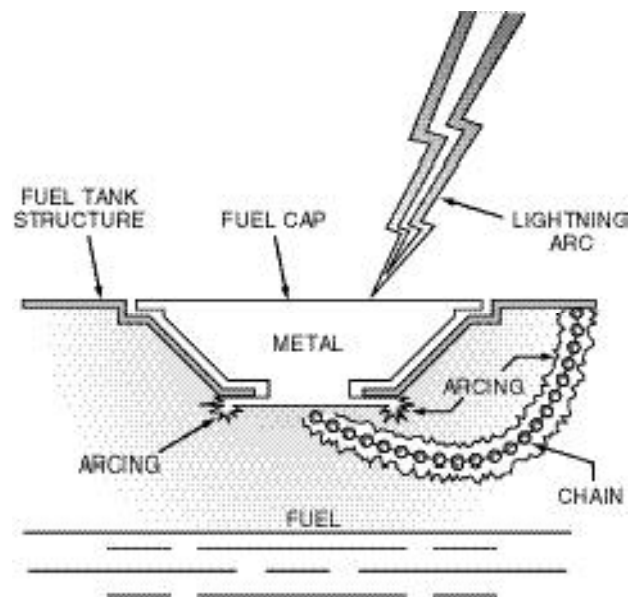
The FAA is aware that the fuel cap installation on some current production aircraft, and replacement fuel cap kits, includes metal retention chains.

These aircraft, often not originally equipped with any type of fuel cap retention device, were not certificated to meet the lightning protection rules that are currently required. The current required lightning certification criteria is identified in Title 14 of the Code of Federal Regulations (14 CFR) part 23, section 23.867 and is explained in FAA Advisory Circular (AC) 20-53A, Protection of Aircraft Fuel Systems Against Fuel Vapor Ignition Due to Lightning, which recognizes the contribution of metal chains to the potential of fuel tank explosions induced by lightning strikes. Aircraft are vulnerable to

lightning strikes when operating near frontal conditions, circumventing thunderstorms, and flying in certain instrument conditions.

The FAA discourages the use of metallic fuel cap retention and encourages the use of nonmetallic, fuel-resistant devices. These nonmetallic fuel cap retainers provide greater lightning protection, especially for float-equipped and high-wing aircraft. (Refer to the following illustration.) We encourage aircraft manufacturers and aftermarket suppliers to provide only nonmetallic, fuel-resistant fuel cap retainers which do not contribute to electrical arcing.

Metallic cap retainers installed by the manufacturer may be removed and replaced by a nonmetallic retainer. This action constitutes a "minor alteration" and should be accomplished in accordance with 14 CFR part 43.



AIR NOTES

ADDRESS CHANGES

In the past, the Designee Standardization Branch (AFS-640) maintained the mailing list for this publication. Now, the Government Printing Office (GPO) sells this publication and maintains the mailing list; therefore, please send your address change to:

U.S. Government Printing Office
ATTN: SSOM, ALERT-2G
710 N. Capital Street N. W.
Washington, DC 20402

You may also send your address change to GPO via FAX at: (202) 512-2168. If you FAX your address change, please address it to the attention of: **SSOM, ALERT-2G**.

Whether you mail or FAX your address change, please include a copy of your old address label, and write your new address clearly.

SUBSCRIPTION FORM

Many of our readers voiced their concern when, due to a budget reduction, it was necessary to stop printing and distributing paper copies free of charge.

The Government Printing Office (GPO) agreed to print and distribute the Alerts. However, there will be a 1-year subscription charge for this service. The charge will be \$25 per year for domestic mailings and \$31.25 per year for foreign mailings. For your convenience, a subscription form is included in this publication.

IF YOU WANT TO CONTACT US

We welcome your comments, suggestions, and questions. You may use any of the following means of communication to submit reports concerning aviation-related occurrences.

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You can access current and back issues of this publication from the internet at:

<http://www.mmac.jccbi.gov/alerts>

This web site also has view, search, E-Mail, and M or D submit functions.

The "Fedworld" web site is:

<http://www.fedworld.gov/pub/faa-asi/faa-asi.htm>

The "Fedworld" web site has approximately 5 years of back issues listed. The files are titled using eight characters. The first three characters are ALT. The second three characters indicate the month (Jan, Feb, etc.). The last two characters indicate the year (98, 99, etc.). The more recent files are in Adobe Acrobat (PDF) format and can be viewed and downloaded. To download individual monthly files, place the mouse pointer at the desired file, and click the right mouse button. This will produce a drop-down menu. Select "save target as" from the drop-down menu, and click the left mouse button. Select a location for the downloaded files to reside. You can print the downloaded file(s). **NOTE:** The Service Difficulty Report (SDR) files are at the end of the ALT files.

AIRWORTHINESS DIRECTIVES (AD's) ISSUED IN OCTOBER 1999

99-19-22; Eurocopter Deutschland;
Rotorcraft: BO-105A, BO-105C, BO-105 C-2,
BO-105 CB-2, BO-105 CB-4, BO-105S, BO-105
CS-2, BO-105 CBS-2, BO-105 CBS-4, and
BO-105LS A-1

99-19-23; Eurocopter France; Rotorcraft:
EC 120B

99-20-11; Burkhart Grob; Sailplane: G103
Twin II and G103A Twin II Acro

99-20-12; MD Helicopters; Rotorcraft: 369D,
369E, 369FF, 500N, and 600N

99-21-01; Eurocopter France; Rotorcraft:
SA-360C, SA-365C, C1, and C2

99-21-05; Fairchild; SA226-T, SA226-T(B),
SA226-AT, and SA226-TC

99-21-13; Eurocopter France; Rotorcraft:
AS332C , L, and L1

99-21-14; Eurocopter France; Rotorcraft:
SA-360C, SA-365C, C1, C2, SA-365N, N1,
AS-365N2, and SA-366G1

99-20-13; Eurocopter Canada; Rotorcraft:
BO 105 LS A-3

99-21-23; Avions Mudry; CAP 10B

99-21-24; Eurocopter France (figure);
Rotorcraft: SA-365C, C1, C2, N, and N1;
AS-365N2; and SA-366G1

99-21-25; Eurocopter France; Rotorcraft:
SE.3160, SA.315B, SA.316B, SA.316C, and
SA.319B

99-22-01; Eurocopter Deutschland;
Rotorcraft: EC135 P1 and T1

HAPPY HOLIDAYS

REFLECTIONS AND PROJECTIONS

As we approach the end of another productive year and look forward to a new millennium, let us reflect upon the events of the past and look with enthusiastic optimism to the future. May the experiences of the past year guide us to decisions which will increase aviation safety in the years to come.

Since 1978, it has been our privilege to provide the aviation community with this media for disseminating your aviation experience. The intent is to create a safer aviation environment through the interchange of information. With your input and help, this publication has prospered over the years and this is attributed to your participation. There have been many changes in aviation and virtually all of aviation history has taken place in the past 100 years. Some of the changes may not have been good; however, when all changes are considered, aviation has taken great strides forward. Many of the innovations and advancements took place because one person had an idea or wondered how something could be done better.

As we ponder and project the future of aviation, we have visions of great changes to come which now are only a glimmer in someone's eye. So, it is with august anticipation, we look to see what each new day will present. Challenges and problems are met with solutions and change.

As the holiday season approaches, we wish all of you a joyous time with family and friends. We should ponder with a sincere appreciation the skills, talents, and knowledge we have been given.

MERRY CHRISTMAS AND

HAPPY NEW YEAR

AVIATION SERVICE DIFFICULTY REPORTS

The following are abbreviated reports submitted between July 21, 1999, and August 20, 1999, which have been entered into the FAA Service Difficulty Reporting (SDR) System data base. This is not an all inclusive listing of Service Difficulty Reports. The full SDR reports can be found on the internet at: <<http://www.fedworld.gov/pub/faa-asi/faa-asi.htm>>. This internet address takes you to the FAA ASI Library and the SDR reports are listed by weekly entries. This data base is maintained by the FAA, Regulatory Support Division, Aviation Data Systems Branch, AFS-620 located in Oklahoma City, Oklahoma. The mailing address is:

FAA
Aviation Data Systems Branch, AFS-620
PO Box 25082
Oklahoma City, OK 73125

These reports contain raw data that has not been edited. If you require further detail please contact AFS-620 at the address above.

SERVICE DIFFICULTY REPORT DATA

Sorted by aircraft make and model and then engine make and model. This report derives from unverified information submitted by the aviation community without FAA review for accuracy.

ACFT MAKE ACFT MODEL REMARKS	ENG MAKE ENG MODEL	COMP MAKE COMP MODEL	PART NAME PART NUMBER	PART CONDITION PART LOCATION	DIFF-DATE FAA REPORT NO.	T TIME TSO
		AMERI KING	ELT AK450	MISMANUFACTURE CABIN	10/30/1999 1999111900251	
ALL REMOTE SWITCHES WIRED WRONG FROM MANUFACTURER.						
	PWA		CASE	CRACKED	10/28/1999	
3318	F117PW100		1B3055	DIFFUSER	1999110500096	
ENGINE REMOVED FOR CRACK AT 17TH STAGE BLEED BOSS, APPROXIMATELY 5 INCHES LONG.CASE HAS BEEN FORWARDED TO PRATT & WHITNEY MATERIAL LAB FOR INVESTIGATION.PARTTOTAL CYCLES, 2,134.						
BBAVIA 2276			MOUNT	FAILED	11/02/1999	
8KCAB			71503	ENGINE	1999111100248	
ENGINE MOUNT TUBE WAS FOUND BROKEN IN TWO WHERE IT CROSSES ABOVE MAGNETOS CAUSING EXCESSIVE FLEXING OF ENGINE IN MOUNT. AIRCRAFT WAS USED AS AN AEROBATIC TRAINER.						
BEECH 1900C		AMERI KING AK950KLN90B	LIGHT	FAILED SWITCH	10/27/1999 1999111100252	
'GPS' MODE LIGHT OUT AFTER 726 HOURS/70 DAYS OF OPERATION.						
BEECH B300			SWITCH 1013646287	MALFUNCTIONED NLG	10/25/1999 1999110500770	1733
THE RED LIGHT IN THE LANDING GEAR HANDLE, 'GEAR UNSAFE LIGHT', WOULD NOT EXTINGUISH WITH LANDING GEAR IN FULLY RETRACTED POSITION.JACKED AIRCRAFT, CHECKED ALL UP AND LOCK SWITCHES, AND ASSOCIATED WIRING.CYCLED LANDING GEAR THROUGH TEN COMPLETE EXTENSION/RETRACTION CYCLES.COULDN'T DUPLICATE.NO PROBLEMS FOUND.REPLACED UPLOCK SWITCHES ON ALL 3 LANDING GEAR.PERFORMED TEST						
BEECH B300			SWITCH 10136462811	MALFUNCTIONED MLG	10/25/1999 1999110500771	1733
THE RED LIGHT IN THE LANDING GEAR HANDLE, 'GEAR UNSAFE LIGHT', WOULD NOT EXTINGUISH WITH LANDING GEAR IN FULLY RETRACTED POSITION.JACKED AIRCRAFT, CHECKED ALL UP AND LOCK SWITCHES, AND ASSOCIATED WIRING.CYCLED LANDING GEAR THROUGH TEN COMPLETE EXTENSION/RETRACTION CYCLES.COULDN'T DUPLICATE.NO PROBLEMS FOUND.REPLACED UPLOCK SWITCHES ON ALL 3 LANDING GEAR.PERFORMED TEST						
BEECH M35			BRACE 3536901817	CRACKED ALTERNATOR	10/25/1999 1999111100120	3614
ALTERNATOR FAILED EN ROUTE.INSPECTION REVEALED THE FIELD WIRE BROKE LOOSE FROM ALTERNATOR MOST LIKELY DUE TO A CRACKED ALTERNATOR SUPPORT BRACE BEING CRACKED ALLOWING THE ALTERNATOR TO						
BELL 230			BEARING 222344606101	WORN T/R DRIVE	11/08/1999 1999111900150	4497

BEARING WORN AND HIGH VIBRATION NR 2 POSITION.REPLACED PART.				
BELL 230 BEARING SUSPECTED AS CAUSING VIBRATION.REPLACED PART.	BEARING 222344606101	DAMAGED T/R DRIVE	11/08/1999 1999111900151	4497
BELL 230 ISOLATION MOUNT HAD WORN BEARING.REPLACED PART.	ISOLATION 222331618105	WORN M/R GEARBOX	11/08/1999 1999111900152	1213
BELL 230 RIGHT LATCH ASSEMBLY DIFFICULT TO OPEN.REPLACED PART.	LATCH ASSY 1008402	DAMAGED PILOT DOOR	11/08/1999 1999111900153	4273
BELL 230 ISOLATION MOUNT SUSPECT VIBRATION/EXCESSIVE.REPLACED PART.	ISOLATION 222331618105	DAMAGED M/R GEARBOX	11/08/1999 1999111900154	1110
BELL 230 ROD END HAD WORN BEARING.REPLACED PART.	ROD END 230030535101	WORN M/R TRANSMISSION	11/08/1999 1999111900155	
BELL 230 ACTUATOR ROD SEAL LEAKING.REPLACED PART.	ACTUATOR 222382001105	LEAKING PILOT VALVE	11/08/1999 1999111900156	2953
BELL 230 LATCH ASSEMBLY STICKING AND JAMMING.REPLACED PART.	LATCH ASSY 1008406	STICKING LAV DOOR	11/08/1999 1999111900157	4253
BELL 230 AIRSPEED SWITCH ALLOWS GEAR WARNING HORN.REPLACED PART.	SWITCH 222375036103	MALFUNCTIONED AIRSPEED	11/08/1999 1999111900158	4459
BELL 230 FLARE MISSING.REPLACED PART.	LINE 230065535101	DAMAGED HYDRAULIC SYS	11/08/1999 1999111900159	4470
BELL 230 ACTUATOR ASSEMBLY LEAKING.REPLACED PART.	ACTUATOR 222382001105	LEAKING PILOT VALVE	11/08/1999 1999111900160	3246
BELL 230 TAIL ROTOR LINK BEARINGS WORN.REPLACED PART.	LINK 230312001101	DAMAGED TAIL ROTOR	11/08/1999 1999111900161	
BELL 230 MAIN ROTOR BLADE CRACKED LEADING EDGE AND LOWER SKIN.REPLACED PART.	BLADE 222015600111	CRACKED MAIN ROTOR	11/08/1999 1999111900162	4194
BELL 407 REPLACED FUEL QUANTITY INDICATOR WITH NEW INDICATOR FROM BELL HELICOPTER DUE TO FAILURE.	INDICATOR 407375006101	FAILED FUEL QUANTITY	10/26/1999 1999111100145	65
BELL 407 PLUG LEAKING, REPLACED PART.	FUSIBLE PLUG 8226003	LEAKING FLOAT	11/08/1999 1999111900148	509
BELL 407 STROBE LIGHT BURNED OUT.REPLACED PART.	STROBE A469B	FAILED FUSELAGE	11/08/1999 1999111900149	71
BELL 407 LUMP BURNED OUT.SCRAPPED.ORDERED REPLACEMENT PARTS.	LAMP 4596	FAILED LANDING LIGHT	11/08/1999 1999111900143	543
BELL 407 FUEL FILTER ASSEMBLY HAD CORROSION ON BYPASS INDICATOR SWITCH CONNECTOR.ORDERED REPLACEMENT	FUEL FILTER 222366621103	CORRODED FUEL SYSTEM	11/08/1999 1999111900144	455
BELL 407 STARTER/GENERATOR WILL NOT ENGAGE OR TURN FOR START.	STARTER/GEN 206062200113	FAILED ENGINE	11/08/1999 1999111900145	519
BELL 407 LAMP BURNED OUT.REPLACED PART.	LAMP 4596	FAILED LANDING LIGHT	11/08/1999 1999111900146	26
BELL 407 STROBE LIGHT BURNED OUT, SCRAPPED.REPLACED PART.	STROBE A469B	FAILED FUSELAGE	11/08/1999 1999111900147	30
BELL 412EP ACTUATOR FAILED.REPLACED WITH NEW ACTUATOR FROM BELL HELICOPTER.	ACTUATOR 212076004101	FAILED MAIN ROTOR	10/21/1999 1999111100140	15

BOEING E75	CONT W6706A	BEARING 2542	FAILED NR 2 CYLINDER	10/28/1999 1999110500088	637
APPROX 15 MINUTES AFTER TAKEOFF FROM A RE-FUELING STOP ON A LONG CROSS-COUNTRY FLIGHT, OIL TEMP BEGAN A RAPID RISE AND OIL PRESSURE FELL TO 0-21 PSI (FLUCTUATING).AN OFF-FIELD LANDING WAS MADE WITH THE AIRCRAFT NOSEING OVER NEAR THE END OF THE LANDING ROLL.UPON CHECKING THE MAIN AND SCAVENGING OIL SCREENS, LARGE PIECES OF METAL WERE FOUND IN THE SCAVENGING SCREEN AND IT WAS ALMOST COMPLETELY BLOCKED.NR 2 CYL WAS PULLED AND THE BALL BEARING CAGES WERE COMPLETELY GONE WITH EXTENSIVE PEENING DAMAGE EVIDENT IN THE CRANKCASE.THE METAL RECOVERED FROM THE SCAVENGE SUMP SCREEN WAS IDENTIFIED ASPARTS OF THE BEARING CAGES.UNABLE TO DETERMINE THE CAUSE OR SEQUENCE OF THE FAILURES.					
CESSNA 152		BOLT	WRONG PART TAILWHEEL	10/28/1999 1999111900246	945 533
CESSNA 152 TEXAS TAIL DRAGGER CONVERSION. TAILWHEEL HALVE SEPARATED AFTER LANDING DUE TO IMPROPER LENGTH BOLTS (TOO SHORT).INSTALLED CORRECT LENGTH BOLTS AFTER INSPECTING WHEEL HALVES.					
CESSNA 152	LYC O235L2C	BRACKET 04320049	CRACKED FUSELAGE	10/29/1999 1999111100254	
PERFORMED A DETAILED INSPECTION OF BRACKET, PN 0432004-9, CRACKS WERE FOUND ALONG TOP PART OF BRACKET ON THE WELD AREA,ONE CRACK 2 INCHES LONG,THE OTHER CRACK, 1.25 INCHES LONG.ALSO, CRACKS WERE FOUND ALONG RIVNUT HOLES AND BOLT HOLE ONTHE MAJORITY OF THE BOLT HOLES.INSPECTED SEVERAL BRACKETS FROM SALVAGE YARDS AND ALL OF THEM WERE CRACKED.ALL CRACKS WERE HIDDEN.SUBMITTER STATED BRACKET MUST BE REMOVED, CLEANED, AND ZYGLO.					
CESSNA 172M		MUFFLER 175400125	LEAKING EXHASUT	11/01/1999 1999111100243	800
MUFFLERS ONLY LAST 500 TO 800 HOURS BEFORE EXHAUST STARTS LEAKING AT TAILPIPE JUNCTION TO MUFFLER CAN.TAILPIPE NEEDS TO BE WELDED INSIDE MUFFLER CAN TO CLOSE CAM JUNCTION.					
CESSNA 172M	LYC O320E2D	LOCK PLATE 105217	FAILED CARBURETOR	11/01/1999 1999111100242	900
BODY TO BOWL SCREWS LOOSE.ONE LOCK PLATE MISSING WITH SCREW STILL IN HOLE.ALL LOCK PLATES BROKEN ALLOWING SCREWS TO LOOSEN AND BOWL TO SEPARATE.LOCK PLATES BAD.					
CESSNA 172R		BUSHING 05412024	FAILED RTMLG	10/22/1999 1999111900245	199
DURING A ROUTINE INSPECTION OF THE AIRFRAME, THE RIGHT MAIN LANDING GEAR MOUNT BUSHING INNER MATERIAL WAS FOUND PRESSED COMPLETELY OUT OF THE BUSHING.POSSIBLE CAUSE OF FAILURE WAS DUE TO IMPROPER FIT BETWEEN LANDING GEAR LEG OUTSIDE DIAMETER AND BUSHING MATERIAL INSIDE DIAMETER. INSTALLATION OF BUSHING REQUIRED EXCESSIVE FORCE CAUSING A BREAKDOWN OF THE ADHESION BETWEEN THE BUSHING MATERIAL OUTSIDE DIAMETER AND THE BUSHING INSIDE DIAMETER.THE BUSHING MATERIAL WILL THEN LOOSEN AND EVENTUALLY WORK ITSELF COMPLETELY OUT OF THE BUSHING.					
CESSNA 172R	LYC IO360L2A	ENGINE	MALFUNCTIONED FORWARD	10/28/1999 1999111900255	1069
DURING NORMAL CRUISE, THE CREW EXPERIENCED MOMENTARY ENGINE ROUGHNESS.THE ENGINE WAS THOROUGHLY INSPECTED AND NO SUSPECT ITEMS WERE FOUND.					
CESSNA 172R	LYC IO360L2A	ENGINE	MALFUNCTIONED FORWARD	11/08/1999 1999111900253	2076
DURING NORMAL CRUISE, THE ENGINE EXPERIENCED MOMENTARY ROUGHNESS.THE ENGINE WAS THOROUGHLY INSPECTED AND NO SUSPECT ITEMS WERE FOUND.					
CESSNA 172R	LYC IO360L2A	ENGINE	MALFUNCTIONED FORWARD	11/08/1999 1999111900254	834
DURING NORMAL CRUISE AT 3,500 FEET, THE ENGINE EXPERIENCED MOMENTARY ROUGHNESS.THE ENGINE WAS THOROUGHLY INSPECTED AND NO SUSPECT ITEMS WERE FOUND.					
CESSNA 172R	LYC IO360L2A	ENGINE	MALFUNCTIONED FORWARD	11/08/1999 1999111900256	1389
WHILE DOING GROUND REFERENCE MANEUVERS, THE ENGINE RAN ROUGH FOR SEVERAL SECONDS.A THOROUGH INSPECTION WAS PERFORMED ON ALL ENGINE SYSTEMS AND NO SUSPECT ITEMS WERE FOUND.					
CESSNA 172R	LYC IO360L2A	ENGINE	MALFUNCTIONED FORWARD	11/08/1999 1999111900257	1047
DURING NORMAL CRUISE, CREW EXPERIENCED MOMENTARY ENGINE ROUGHNESS.THE ENGINE WAS THOROUGHLY INSPECTED AND NO SUSPECT ITEMS WERE FOUND.					
CESSNA 172R	LYC IO360L2A	ENGINE	MALFUNCTIONED FORWARD	11/08/1999 1999111900258	1055
DURING NORMAL CLIMB, THE ENGINE EXPERIENCED MOMENTARY ROUGHNESS (2 SECONDS).THE ENGINE WAS THOROUGHLY INSPECTED AND NO SUSPECT ITEMS WERE FOUND.					
CESSNA 172R	LYC IO360L2A	ENGINE	MALFUNCTIONED FORWARD	11/08/1999 1999111100255	707
DURING NORMAL CRUISE OPERATIONS, THE ENGINE EXPERIENCED A 2 SECOND POWER LOSS, ABOUT 250 RPM.THE ENGINE WAS THOROUGHLY INSPECTED AND NO SUSPECT ITEMS WERE FOUND.					

CESSNA 172R	LYC IO360L2A	ENGINE	MALFUNCTIONED FORWARD	11/08/1999 1999111100256	1230
DURING NORMAL CRUISE OPERATION, THE ENGINE EXPERIENCED MOMENTARY ROUGHNESS.THE ENGINE WAS THOROUGHLY INSPECTED AND NOSUSPECT ITEMS WERE FOUND					
CESSNA 172R	LYC IO360L2A	ENGINE	MALFUNCTIONED FORWARD	11/08/1999 1999111100257	1022
DURING NORMAL CRUISE OPERATIONS, THE ENGINE EXPERIENCED MOMENTARY ROUGHNESS.THE ENGINE WAS THOROUGHLY INSPECTED AND NO SUSPECT ITEMS WERE FOUND.					
CESSNA 172R	LYC IO360L2A	ENGINE	MALFUNCTIONED FORWARD	11/08/1999 1999111100258	832
DURING NORMAL CRUISE OPERATIONS, THE ENGINE EXPERIENCED MOMENTARY ROUGHNESS.THE ENGINE WAS THOROUGHLY INSPECTED AND NO SUSPECT ITEMS WERE FOUND.					
CESSNA 172R	LYC IO360L2A	ENGINE	MALFUNCTIONED FORWARD	11/08/1999 1999111100259	856
DURING NORMAL CLIMB, THE ENGINE EXPERIENCED MOMENTARY ROUGHNESS (2 SECONDS).THE ENGINE WAS THOROUGHLY INSPECTED AND NOSUSPECT ITEMS WERE FOUND.					
CESSNA 172R	LYC IO360L2A	ENGINE	MALFUNCTIONED FORWARD	11/08/1999 1999111100260	1547
DURING NORMAL CRUISE OPERATIONS, THE ENGINE EXPERIENCED A 2 SECOND POWER LOSS.THE ENGINE WAS THOROUGHLY INSPECTED ANDNO SUSPECT ITEMS WERE FOUND.					
CESSNA 172R	LYC IO360L2A	ENGINE	MALFUNCTIONED FORWARD	11/08/1999 1999111100261	2005
DURING NORMAL CRUISE OPERATIONS, THE ENGINE EXPERIENCED MOMENTARY ROUGHNESS (2 SECONDS).THE ENGINE WAS THOROUGHLY INSPECTED AND NO SUSPECT ITEMS WERE FOUND.					
CESSNA 210G	CONT IO520A	CYLINDER CLASS717	CRACKED ENGINE	10/27/1999 1999111900247	572
DURING INSPECTION, FOUND GREASE LIKE FLUID ON INDUCTION TUBES AND WHERE CYLINDER AND HEAD ATTACH. REMOVED AND SENT TO OVERHAUL SHOP.REPORTED CRACKED HEAD WILL COME OFF SOON.REMOVED AND REPLACED CYLINDER.SUBMITTER RECOMMENDED CHECKING THIS LOCATION AT CYLINDER O/H AND KEEP TRACK OF CYLINDER AND HEAD TOTAL TIME.					
CESSNA 425		HOSE AE7059761	FAILED ENGINE OIL	10/21/1999 1999111100269	118
SIDE WALL OF RIGHT OIL COOLER HOSE, PN AE705976, FAILED WHERE HOSE MAKES A SHARP BEND WHEN INSTALLED. HOSE FAILED WITHNO SIGNS OF PREVIOUS LEAKAGE.CESSNA RECOMMENDED INSTALLATION OF LONGER OIL HOSE, PN AE7013002K0204.HOSE INSTALLATION REQUIRES FORM 337 FIELD APPROVAL.FIVE HOURS PRIOR TO THIS FAILURE, THE LEFT HOSE WAS CHANGED DUE TO LEAKAGE.CURRENTLY, THE ACFT HAS PN AE7013002K0204 ON LEFT AND RIGHT ENGINES.IT APPEARS FAILURES COULD BE THE RESULT OF THE SHARP BEND THE HOSE MAKES WHEN INSTALLED OR FAULTY MANUFACTURING.THIS ACFT HAD TO SHUT THE RIGHT ENGINE DOWN WHEN THE FAILURE					
CESSNA A185E		CABLE C2995070201	FAILED MIXTURE	10/28/1999 1999111100246	
AIRCRAFT GRADUALLY LOST POWER AND CRASHED.INVESTIGATION FOUND THE THREADED END OF THE MIXTURE CABLE WAS FOUND SEPARATED FROM THE ROD END IN THE ENGINE COMPARTMENT.THE TIPS OF THE ELEVEN THREADS ON THE END OF THE CABLE WERE WORN SO THATIT COULD BE INSERTED IN THE ROD END WITH LITTLE RESISTANCE.THE JAM NUT WAS FOUND ON THE GOOD THREADS ADJACENT TO THE WORN THREADS.THE ROD END COULD BE SECURELY THREADED ON TO THE SERVICEABLE THREADS.					
DIAMON DA20C1	CONT IO240B	EXHAUST	SEPARATED ENGINE	10/29/1999 1999111100119	20
SUBMITTER STATED THEY HAVE ENCOUNTERED MULTIPLE EXHAUST STACK FAILURES ON FLEET OF KATANA DA-20-C1.THE SEPARATION OCCURRING AT THE EXHAUST PORT ATTACH FLANGE.AT THIS POINT, FLEET HAS BEEN GROUNDED UNTIL ALL STACKS HAVE BEEN INSPECTED AND A CAUSE HAS BEEN DETERMINED.TOTAL TIME ON AFFECTED PARTS IS LESS THAN 200 HOURS.					
LEAR 25	GE CJ6106	ENGINE	FLAMED OUT LEFT	10/30/1999 1999111900243	7690 4564
DURING CLIMB-OUT, THE LEFT ENGINE EXPERIENCED A FLAME OUT.THE FLIGHT CREW SAID THEY HEARD A POP AND EXPERIENCED ENGINE INDICATIONS ON THE LEFT ENGINE ROLL BACK.THEY DESCENDED AND PROCEEDED TO COMPLETE EMERGENCY AND NORMAL CHECK LISTS. THEY CONCLUDED THE FLAME OUT WAS DUE TO AN OPERATIONAL ERROR AND RESTARTED THE ENGINE AND CONTINUED THE FLIGHT WITHOUT INCIDENT.					
LEAR 35A		BEARING VTB0816	CRACKED TRUNNION	10/21/1999 1999111100271	11784
DURING REMOVAL OF RIGHT MAIN LANDING GEAR ASSY FOUND OUTER HOUSING OF FORWARD TRUNNION BEARING CRACKED COMPLETELY THROUGH.INSTALLED NEW ONE.BALL WAS EXTREMELY LOOSE IN HOUSING.LANDINGS:					
MOONEY M20K	KFC150	BEARING 047041430000	FROZEN AILERON TRIM	11/01/1999 1999111900252	1532
CUSTOMER COMPLAINED TRIM WAS VERY STIFF TO OPERATE MANUALLY.INSPECTION FOUND THIS BEARING FROZEN AND NOT ALLOWING TRIM TORQUE TUBE TO ROTATE FREELY.ASSEMBLY WAS REPLACED AND TRIM SYSTEM					

OPERATION RESTORED.

MTSBSI	GARRTT	TUBE	CRACKED	10/26/1999	
MU2B60	TPE33110	035A63221	BLEED AIR	1999111100133	
AIRCRAFT IN FOR INSPECTION.FOUND BLEED AIR TUBE CRACKED AT WELD FOR MOUNT FLANGE TO ENGINE.					
SUBMITTER STATED THIS IS 4TH CONSECUTIVE AIRCRAFT IN FOR INSPECTION THAT ONE OR TWO WERE CRACKED.					
PIPER		BELT	WORN	10/21/1999	
PA28235		73965009	ALTERNATOR	1999111100245	
BELT STARTED TO WEAR IN ONE SPOT ABOUT 6 INCHES LONG AND STARTED TO TURN IN FLYWHEEL GROOVE.					
SKRSKY		INDICATOR	MALFUNCTIONED	11/08/1999	770
S76C		7645001076112	TRIPLE TACH	1999111900080	
INSTALLED IN AIRCRAFT ROTOR NEEDLE ADVANCED ABOVE NR 1, 32 ENGINE NEEDLES, ENGINE NEEDLES WOULD NOT MARRY WITH ROTOR NEEDLE, ROTOR NEEDLE 107 PERCENT, NR 1 ENGINE 70 PERCENT.THROTTLES IN FLY POSITION.					
SPLIT STAYED THE SAME START TO SHUTDOWN.REPLACED PART.					
SKRSKY		ALTIMETER	MALFUNCTIONED	11/08/1999	770
S76C		066304400	COCKPIT	1999111900081	
INDICATOR OFF FLAG WILL NOT PULL WHEN INDICATOR POWERED UP, BUT INDICATOR WORKED OTHERWISE.					
REPLACED PART.					
SKRSKY		AMPLIFIER	ERRATIC	11/08/1999	728
S76C		7690001825103	PITCH ACTUATOR	1999111900082	
PILOT REPORTED ERRATIC PITCH BIAS ACTUATOR MOVEMENT.REPLACED PART.					
SKRSKY		INDICATOR	FAILED	11/08/1999	5
S76C		H190110	N1	1999111900084	
N1 INDICATOR NEEDLE STOPS MOVING IN-FLIGHT.CAN GET IT BACK IN OPERATIONAL BY DISCONNECTING ALL POWER THEN RECONNECTING POWER, BUT INDICATOR CONTINUES TO MALFUNCTION, REPLACED PART.					
SKRSKY		SERVO	INTERMITTENT	11/08/1999	784
S76C		7040002200108	PITCH BIAS LINER	1999111900085	
PITCH BIAS ACTUATOR , PBA, INTERMITTENTLY CAUSES AIRCRAFT TO PITCH UP OR DOWN DURING CRUISE FLIGHT.					
REPLACED PART.					
SKRSKY		CLOCK	SLOW	11/08/1999	752
S76C		W33751010ET20	COCKPIT	1999111900086	
CLOCK LOOSES 10 MINUTES EVERY DAY.REPLACED PART.					
SKRSKY		INDICATOR	MALFUNCTIONED	11/08/1999	330
S76C		7645001096101	N1	1999111900087	
THE DIGITAL NUMBERS THAT WERE LIT UP, WERE BRIGHTER THAN THE OTHER N1 INDICATOR, IT WOULD PULL THE BRIGHTESS OF ANY OTHER INDICATOR IT WAS PAIRED WITH DOWN TO ALMOST NO INDICATION, WHEN LIGHT CONTROL SET TO MINIMUM AND WHEN SET AT MAXIMUM, IT WAS ALWAYS BRIGHTER THAN THE OTHER.REPLACED					
SKRSKY		INDICATOR	FLUCTUATING	11/08/1999	21
S76C		H190110	N1	1999111900088	
N1 INDICATOR AFTER APPROXIMATELY 1 TO 1-1/2 HOURS OF OPERATION, INDICATOR NEEDLE STARTED FLUCTUATING FROM OPERATING RANGE TO ZERO AND BACK AGAIN.ALL TESTS AND WARNING LIGHTS WOULD BLINK OFF AND ON AND DIGITS WOULD READ 8888.SUBMITTER STATED THE CONNECTOR WAS TIGHT AND HAD NO PROBLEMS LIKE THIS WITH ANY INDICATOR BEFORE OR AFTER.REPLACED PART.					
SKRSKY		INDICATOR	STICKING	11/08/1999	
S76C		7645001076112	TRIPLE TACH	1999111900089	
NR 1 AND NR 2 NEEDLES STICK AT 20 PERCENT ON TRIPLE TACHOMETER.REPLACED PART.					
SKRSKY		INDICATOR	FLUCTUATES	11/08/1999	
S76C		7645001078126	ENG OIL TEMP	1999111900090	
ENGINE OIL TEMPERATURE'S PRESSURE NEEDLE FLUCTUATES VERY RAPIDLY (BLURRY), THEN DROPS BELOW ZERO PRESSURE.REPLACED PART.					
SKRSKY		ACTUATOR	STICKING	11/08/1999	2704
S76C		7690001802106	AFCS	1999111900091	
AFCS ACTUATOR STICKING, CAUSED FEEDBACK IN CONTROLS.REPLACED PART.					
SKRSKY		BEARING	WORN	11/08/1999	
S76C		SB52001	SWASHPLATE	1999111900092	
SCISSOR BEARING WORN.REPLACED PART.					
SKRSKY		AHRS	FAILED	11/08/1999	1350
S76C		1418523211	COCKPIT	1999111900093	
ATTITUDE FLAG FAILED TO PULL OUT OF SIGHT AND AHRS CAUTION LIGHT WILL NOT EXTINGUISH.REPLACED PART.					
SKRSKY		TRANSCIEVER	MALFUNCTIONED	11/08/1999	293
S76C		062001420200	COCKPIT	1999111900094	
RECEIVES CLEARLY ON 158 FREQUENCY. BUT TRANSMISSION IS GARBLED.REPLACED PART.					
SKRSKY		INDICATOR	READS HIGH	11/08/1999	3162
S76C		066104800	COCKPIT	1999111900097	

INDICATORS HIGH.REPLACED PART.					
SKRSKY		RESERVIOR	DIRTY	11/08/1999	
S76C		7610608050043	MAIN ROTOR HEAD	1999111900098	
RESERVOIR STAINED AND DIRTY.REPLACED UNIT.					
SKRSKY		INDICATOR	FLUCTUATES	11/08/1999	
S76C		7645001078126	ENG OIL TEMP	1999111900099	
ENGINE OIL TEMPERATURE NEEDLE FLUCTUATED RAPIDLY (BLUFFY) FOR A FEW SECONDS, 3-5 TIMES PER MINUTE. REPLACED UNIT.					
SKRSKY		CONTROLLER	MALFUNCTIONED	11/08/1999	
S76C		775330200	AFCS	1999111900100	
RDA DATA UNIT WOULD NOT UPDATE.INDICATED LOW BATTERY. REPLACED UNIT.					
SKRSKY		VALVE	MALFUNCTIONED	11/08/1999	
S76C		7650007903102	AIR SHUTOFF	1999111900101	
SHUT-OFF VALVE WOULD NOT CLOSE COMPLETELY.REPLACED UNIT.					
SKRSKY		GPS	FAILED	11/08/1999	
S76C		8144002241B	COCKPIT	1999111900102	
EVERY LIGHT FLASHED, UNIT WENT OFF CAME BACK ON WITH NO MEMORY.REPLACED UNIT.					
SKRSKY		GASPER	BROKEN	11/08/1999	
S76C		2515	CABIN	1999111900104	
VALVE GATE GUIDE AND GUIDE SPRING MISSING.REPLACED UNIT.					
SKRSKY	ALLSN	ENGINE	MAKING METAL	11/05/1999	2352
S76C	250C30S 1S1	1S1	ENGINE BAY	1999111900078	
ENGINE ASSEMBLY MAKING METAL.REPLACED WITH ANOTHER ENGINE.					
SKRSKY	ALLSN	ENGINE	MAKING METAL	11/08/1999	2966
S76C	250C30S 1S1	1S1	ENGINE BAY	1999111900079	
METAL FOUND IN REAR MAG PLUG.REPLACED WITH ANOTHER ENGINE.					
SKRSKY	ALLSN	SCREEN	BROKEN	11/08/1999	694
S76C	250C30S	7630207028062	ENGINE INTAKE	1999111900083	
INTAKE SCREEN HAD BROKEN WIRE.REPLACED PART.					
SKRSKY	ALLSN	FCU	FAILED	11/08/1999	1559
S76C	250C30S	0164348490	ENGINE	1999111900103	
UNABLE TO CONTROL START LIGHT OFF TEMPERATURES.REPLACED FCU.					
SKRSKY	TMECA	PUMP	FAILED	11/08/1999	276
S76C	ARRIEL1S1	0292105230	GEARBOX	1999111900095	
LOW OIL PRESSURE AND CHECK VALVE ALLOWS THE OIL TANK TO DRAIN BACK INTO THE GEARBOX AFTER SHUTDOWN .REPLACED PART.					
SKRSKY	TMECA	SENSOR	FAILED	11/08/1999	386
S76C	ARRIEL1S1	9580115900	OVERSPEED	1999111900096	
N2 OVERSPEED LIGHT FAILS TO EXTINGUISH.REPLACED PART.					

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2. AIRCRAFT	MANUFACTURER	MODEL/SERIES	SERIAL NUMBER		
3. POWERPLANT					
4. PROPELLER					
5. SPECIFIC PART (of component) CAUSING TROUBLE					
Part Name	MFG. Model or Part No.	Serial No.	Part Defect Location		
6. APPLIANCE COMPONENT (terminals, first inductive part)					
Comp/Impl Name	Manufacturer	Model or Part No.	Serial Number		
Part ID	Part ID	Part Condition	T. Date Sub.	<i>Optional Information:</i> Check a box below, if this report is related to an aircraft: <input type="checkbox"/> Accident; Date _____ <input type="checkbox"/> Incident; Date _____	

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